

## REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Initially, page 2 of the specification has been amended to insert a brief description of the drawings, in connection with the formal drawings for Figs. 1-3 submitted concurrently herewith accompanied by the cover sheet entitled Submission of Formal Drawings. The description for Figs. 1-3 is the same as submitted with the proposed drawings as attached to Applicants' response of May 12, 2010. As noted therein, this description is based on the disclosures in the last full paragraph on page 8; page 11, line 5 to page 12, line 2; and the Examples.

Claim 1 has been amended to delete the word "may" in connection with the definition of "substantially amorphous". The same change has been made in claims 10 and 11. This change is responsive to the Examiner's comments in the first paragraph on page 7 of the Office Action.

Claim 10 has been further amended to change "for performing" to "capable of performing". This amendment is made in connection with the Examiner's comment in the second paragraph on page 7 of the Office Action.

The rejection of claims 1, 3 and 7-11 under the second paragraph of 35 U.S.C. § 112 is respectfully traversed.

Initially, as indicated above, claims 1, 10 and 11 have been amended to delete the word "may" in connection with the definition of "substantially amorphous", which is the basis for the Examiner's rejection under 35 U.S.C. § 112. Further arguments in support of the clarity of the definition of this expression in the amended claims are set forth below, associated with the prior art rejections.

Thus, the rejection of claims 1-2 and 6-11 under 35 U.S.C. § 102(e) as being anticipated by Stahly (US '064, hereinafter "Stahly") is respectfully traversed.

The Examiner repeats the arguments as to why this reference anticipates the instant invention, namely:

*"Stahly 064 clearly discloses a mostly amorphous crystallizing organic based compound in a mixture of at least two organic compounds which may be used as a solution and resulting in a saturated solution (see col. 2, lines 4-55, col. 4, lines 48-52, col. 6, lines 9-34, and examples 1-3)."*

However, Stahly does in fact not disclose "a mostly amorphous" starting material, neither in any one of the cited passages, nor in the remaining disclosure.

As Applicants explained in their previous response, the instant process leads to solid-forms with lower free energy than the starting material, whereby the starting material is explicitly the amorphous form thereof. Thus, the instant invention uses as educts high energy forms and generates as products less energetic forms.

In contrast thereto, Stahly presents a solid-form screening process to be carried out in capillaries, here referred to as the "capillary method".

US 6,642,060, also from Stahly, describes that this capillary method is useful for generating high free energy forms (e.g see "Field of Invention" or claims). Thus, the US patents by Stahly use as educts lower energy forms and generates as products the intended high energy forms. It is apparent that this approach is totally different from the instant approach:

US 6,750,064 (Stahly, cited by the Examiner) US 6,642,060 (Stahly, cited by the Applicants)	Method: " <u>capillary method</u> " using as educts lower energy forms (crystalline forms) and generates as products high energy forms
Instant Application	Method: starting material is the amorphous form (high energy form) and generates as products low energy forms

**Conclusively, Stahly discloses a method, the "capillary method", using as starting material a crystalline material, which is in contrast to the instantly claimed method, which uses as starting material an amorphous material. Due to this difference alone, the instantly claimed method is novel.**

The Examiner makes the following statement as part of the argumentation as to why Stahly anticipates the instant invention, which is not understood. The Examiner states in the last paragraph on page 3 that (emphasis added):

*"the clause "may" indicates it is an optional limitation and does not necessarily indicate that it must contain crystalline phases."*

The "wherein" clause concerning the amorphous substances in claims 1 and 10 is based on the second paragraph on page 3 of the specification, which reads (emphasis added):

*"Depending on the preparation, amorphous substances may contain crystalline (metastable) phases which, however, are often not measurable. The content of crystalline*

*phases maybe, for example, up to 20% by weight, preferably up to 10% by weight, more preferably up to 5% by weight and particularly preferably only up to 2% by weight.*"

Accordingly, the starting material is an amorphous (unstructured) substance which might contain crystalline (structured) phases. If crystalline phases are present, their content is either not measurable, or within the given ranges.

In item 6 of the Office Action, the Examiner further states that "*the word 'may' as used in the claim denotes an option and not a required feature*". However, it should be clear by now, that in the present case the presence of crystalline phases is indeed an optional feature and not a required feature. In other words, a pure amorphous form is desired, but is does not have to be 100% pure.

In summary, the term "substantially amorphous" is properly used and does not lead to a lack of clarity.

For these reasons, Applicants take the position that the rejection of the claims as being anticipated by Stahly (as well as the rejection under 35 U.S.C. § 112) should be withdrawn.

The rejection of claims 1-4 and 6-11 under 35 U.S.C. 102(b) as being anticipated by Hilfiker et al. is respectfully traversed.

Again, the Examiner repeats the arguments as to why this reference anticipates instant claims 1-4 and 6-11, namely:

*"Hilfiker et al. clearly discloses a mostly amorphous crystallizing organic based compound in a mixture of at least two organic compounds which may be used as a solution and thus resulting in a saturated solution existing at more than 80% excess by weight in the mixture (see pages 429-440)".*

It still remains unclear as to why the Examiner concludes that Hilfiker et al. discloses a "mostly amorphous compound". In contrast, the opposite is correct:

Hilfiker et al. (cited)	Method: using as educts lower energy forms ( <u>thermodynamically stable form</u> ) and generates as products high energy forms
Instant Application	Method: starting material is the amorphous form energy form) and generates as products low energy forms

The Examiner refers only to "pages 429-440", which is the whole article. However, Applicants previous argument is still valid, namely:

"Hilfiker et al. disclose a high-throughput polymorphism screening method using as an example carbamazepine as starting material, a substance known to be in a crystalline form as usually available from commercial sources and as taught by the Merck Index. Please note that Hilfiker et al. explicitly use the "**thermodynamically stable form**" of Carbamazepine form III (page 433, line 5 from bottom) and thus, clearly teaches away from the instant invention."

In contrast thereto, the instantly claimed method uses an amorphous material as a starting material rather than the crystalline form used by Hilfiker et al.

For these reasons, Applicants take the position that the rejection of the claims as being anticipated by this reference should be withdrawn.

The rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Hilfiker et al. as well as the rejection of claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Stahly are respectfully traversed.

As indicated above, both of these references fail to disclose the use of the amorphous form as starting material, and it is also Applicants' position that neither of the references contains any disclosure which would suggest the use of the amorphous form to one of ordinary skill in the art. Accordingly, the claims are also not obvious from either of these references.

Referring again to page 7 of the Office Action, in which the Examiner responds to Applicants' previous arguments, the Examiner merely states that:

*"The arguments presented regarding the gibbs free energy and methodology of processing are not commensurate in scope with the presently claimed invention. Applicants are essentially arguing limitation interpretations and language from the specification but not necessarily denoted in the claimed invention itself."*

The main difference between the instant invention and the cited prior art is that, **as claimed**, the instant invention uses a "substantially amorphous form" as starting material. As the Stahly reference(s) was cited by the Examiner, and as Stahly refers to the "(Gibbs) free energy" it seems appropriate to discuss the "free energy" in the context of the instant invention. Thus, the previously presented arguments are meant to explain the differences in the respective approaches between the disclosed methods in the cited prior art documents and the instant invention.

Further, to discuss the principles behind the "substantially amorphous form" on which the instant invention is based seemed to be necessary as the Examiner continues to cite prior art as anticipating the instant invention despite that the prior art clearly does not use "a substantially amorphous form" as starting material.

For example, the Hilfiker et al. document refers to using the "thermodynamically stable form" as starting material, which is in sharp contrast to the instant method as explained last time. However, the Examiner nevertheless repeats the finding that Hilfiker uses "a mostly amorphous ... compound". Same applies to the Stahly reference which uses a low free energy form as starting material.

There is no difference in that Hilfiker et al. refers to the "thermodynamically stable form", while Stahly et al. refers to the "free energy":

Starting Material	Energy Status	Prior art
crystalline form	- low free energy	Stahly 064: "capillary method" Stahly 060: details of "capillary method"
crystalline form	-highest thermodynamic stability	Hilfiker: Properties of carbamazepine (p. 433)
amorphous form	- highest free energy - least thermodynamic stability	Instant Application

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the applied references.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Fritz BLATTER et al.

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September 1, 2010